› CASE STUDY

VERISTAT

Uncharted Waters in Gene Therapy

Groundbreaking Work Leads to First Gene Therapy Ever Approved in Europe

Background: Setting a New Standard for the Industry

Veristat was brought in to create and manage a full development program for a gene therapy for a very rare inherited disorder. The work involved *charting the course in completely uncharted waters* – our team had to create industry best practices that didn't exist before, anywhere. With no classic route to market, Veristat's experts wrote the map on patient recruitment, regulatory and health agency engagement, natural history studies and the Central Site Model. There were unique, first-of-their-kind challenges every step of the way, but our team's expertise and dedication helped the client cross the finish line with the first gene therapy ever to be approved in Europe.

Study Demographics

Indication:
Reverse Lipoprotein Lipase Deficiency

Full Service from Phase I to Long-Term Follow Up

Primary Services Provided:
- Project Management
- Clinical Monitoring
- Medical Monitoring
- Medical Affairs
- Regulatory Affairs

SOLUTION

Creating a development roadmap for uncharted territory

Veristat was initially brought in to rescue a Phase I study. Based on our team's superior knowledge and execution, our involvement then expanded into a full program. Many critical challenges stemmed from the fact that so few people in the world have the rare inherited disorder, which is prevalent only in people of Dutch descent.

Patient recruitment

Phase I was conducted in Holland and had already made use of most of the people suffering from the disease in the entire world. Additionally, the gene therapy was not a treatment but a cure – and once patients are cured, they leave the study, meaning even fewer subjects at hand. Patient recruitment, then, was the first major challenge and a dealbreaker. Veristat's experts designed a strategy to "hunt" for subjects, scanning publications on the disease to find incidences around the globe. Given the disease's issue of a missing lipase enzyme, patients tend to get pancreatitis and suffer from depression – clues that helped our team in the search. Veristat was able to identify some patients in South Africa, which has a high population of people with Dutch ancestry.

Natural history

Veristat also designed a natural history arm to overcome the lack of study subjects, looking to Canada, where a small population of people with the disorder were found in Quebec. This was traced to one man with an incredibly rare "spontaneous mutation" of the disorder in Toulouse, France who later moved to Quebec. There were not enough patients in Canada for a randomized clinical study, so our experts created a natural history arm instead, using robust data available from childhood to time of treatment. This meant having to collect data in person from centers all over Canada in very inhospitable winter weather.

Challenge arm

To prove that the gene therapy did indeed work, the Veristat team set up a unique challenge arm – feeding patients lipids in the form of a special milkshake to see how they responded after gene therapy treatment. This required identifying and training physicians who could formulate the right milkshake, deliver it the right way and deal with the patient if anything went wrong.

Regulatory

As with the rest of the program, regulatory strategy and interaction followed an iterative process every step of the way. Veristat's specialists had more expertise on the subject than regulators, who weren't at the forefront of gene therapy.

- Health Canada: Our team worked to educate regulators on the product and trial, and how we could address the body's concerns from the very beginning.
- European Medicines Agency (EMA): For any new therapy, the first product is the biggest hurdle, and Veristat created a process where there was no process. The level of rigor and quality was much higher than for an "average" product.
- Committee for Advanced Therapies (CAT), Europe: The regulatory meeting featured much tougher questions – it would take an expert to have any answers at all, let alone the right answers. Pre-approval inspections were also a much higher burden for our team.
- Medicines and Healthcare Products Regulatory Agency (MHRA), UK and the Turkish Medicines and Medical Devices Agency (TMMDA): After the approval, these agencies relied on Veristat experts as a resource for advanced therapy legislation in Europe.

IMPACT

First gene therapy approved in the EU (and only the 7th to go before the CAT)

- The approval was a pivotal moment in medicine – the first time anyone showed that a gene therapy could even be approved. The net result was more investment and interest in the potential of gene therapy to help patients in dire need.
- There are always unique issues to overcome in gene therapy, but Veristat's passion, global expertise and outside-the-box, pioneering thinking brought the client to the finish line and proved we can find a solution for every situation.

- Our team became the expert consultant for gene therapy around the globe, called on by both drug developers and regulatory and healthcare bodies.
- What's best for patients is best for payers – we all want to cure a disease if we can.

ABOUT VERISTAT

The cell and gene therapy partner of choice

We understand how high the stakes are with your cell and gene therapy program. We know that nothing is standard about study design, study conduct or regulatory process in this specialized area. Veristat has successfully supported more than 100 cell and gene therapy projects, with a global team of scientific experts who are adept at strategy and execution across the clinical development pathway. Learn more about Veristat and how we can assist you with your cell or gene therapy trial development, execution, and regulatory submission preparation.

Contact Veristat Today

Learn more about our cell and gene therapy expertise.

www.veristat.com